

What Is Claimed Is:

1 1. A flat panel display, comprising:

2 a plurality of scan lines and a plurality of signal lines
3 intersecting to define a plurality of pixel regions;
4 a main shielding structure having a plurality of main spacings
5 substantially corresponding to the pixel regions and a
6 plurality of gaps, wherein each gap substantially
7 corresponds to one of the scan lines or signal lines, each
8 main spacing is connected to at least one of the gaps, and
9 each gap is connected to two adjacent main spacings; and
10 a plurality of complementary shielding structures corresponding
11 to the gaps.

1 2. The flat panel display of claim 1, further comprising a
2 plurality of pixel electrodes disposed in the pixel regions.

1 3. The flat panel display of claim 2, wherein a plurality of
2 stripe-shaped shielding layers are disposed between the signal lines
3 and the pixel electrodes and overlapping the pixel electrodes and
4 the main shielding structure.

1 4. The flat panel display of claim 3, wherein
2 a first portion of the complementary shielding structures
3 correspond to a first portion of the gaps substantially
4 corresponding to the signal lines and comprise a plurality
5 of first complementary shielding layers partially
6 overlapping the signal lines and the main shielding
7 structure and contacting the stripe-shaped shielding
8 layers; and

9 a second portion of the complementary shielding structures
10 correspond to a second portion of the gaps substantially

11 corresponding to the scan lines and comprise a plurality
12 of second complementary shielding layers partially
13 overlapping the pixel electrodes and the main shielding
14 structure and contacting the scan lines.

1 5. The flat panel display of claim 4, further comprising a
2 plurality of capacitors adjacent to the scan lines and corresponding
3 to the second portion of the gaps.

1 6. The flat panel display of claim 3, wherein
2 a first portion of the complementary shielding structure
3 correspond to a first portion of the gaps substantially
4 corresponding to the signal lines and comprise a plurality
5 of third complementary shielding layers partially
6 overlapping the stripe-shaped shielding layers and the
7 main shielding structure and contacting the signal lines;
8 and
9 a second portion of the complementary shielding structure
10 correspond to a second portion of the gaps substantially
11 corresponding to the scan lines and comprise a plurality
12 of second complementary shielding layers partially
13 overlapping the pixel electrodes and the main shielding
14 structure and contacting the scan lines.

1 7. The flat panel display of claim 6, further comprising a
2 plurality of capacitors adjacent to the scan lines and corresponding
3 to the second portion of the gaps.

1 8. The flat panel display of claim 3, wherein
2 a first portion of the complementary shielding structure
3 correspond to a first portion of the gaps substantially
4 corresponding to the signal lines and comprise a plurality

5 of first and third complementary shielding layers
6 overlapping each other, the first complementary shielding
7 layers partially overlap the signal lines and the main
8 shielding structure and contacting the stripe-shaped
9 shielding layers, the third complementary shielding layers
10 partially overlap the stripe-shaped shielding layers and
11 the main shielding structure and contacting the signal
12 lines; and

13 a second portion of the complementary shielding structure
14 corresponds to a second portion of the gaps substantially
15 corresponding to the scan lines and comprise a plurality
16 of second complementary shielding layers partially
17 overlapping the pixel electrodes and the main shielding
18 structure and contacting the scan lines.

1 9. The flat panel display of claim 8, further comprising a
2 plurality of capacitors adjacent to the scan lines and corresponding
3 to the second portion of the gaps.

1 10. The flat panel display of claim 3, wherein the complementary
2 shielding structures correspond to the gaps substantially
3 corresponding to the signal lines and comprise a plurality of first
4 complementary shielding layers partially overlapping the signal lines
5 and the main shielding structure and contacting the stripe-shaped
6 shielding layers.

1 11. The flat panel display of claim 3, wherein the complementary
2 shielding structure correspond to the gaps substantially
3 corresponding to the signal lines and comprise a plurality of third
4 complementary shielding layers partially overlapping the
5 stripe-shaped shielding layers and the main shielding structure and
6 contacting the signal lines.

12. The flat panel display of claim 3, wherein the complementary shielding structure correspond to the gaps substantially corresponding to the signal lines and comprise a plurality of first and third complementary shielding layers overlapping each other, the first complementary shielding layers partially overlap the signal lines and the main shielding structure and contacting the stripe-shaped shielding layers, the third complementary shielding layers partially overlap the stripe-shaped shielding layers and the main shielding structure and contacting the signal lines.

13. The flat panel display of claim 1, wherein the gaps substantially correspond to the scan lines, the main shielding structure comprises a plurality of fishbone-shaped layers physically separated from each other by a plurality of fishbone-shaped spacings and are parallel with the signal lines, each fishbone-shaped spacing is composed of the main spacings and the gaps.

14. The flat panel display of claim 1, wherein the gaps substantially correspond to the signal lines, the main shielding structure comprises a plurality of fishbone-shaped layers physically separated from each other by a plurality of fishbone-shaped spacings and are parallel with the scan lines, each fishbone-shaped spacing is composed of the main spacings and the gaps.

15. The flat panel display of claim 1, further comprising:
a plurality of common electrodes;
a pixel electrode disposed between the common electrodes; and
a common electrode line connected to the common electrodes and
composed of opaque material;
wherein portions of the common electrode line under the gaps
are the complementary shielding structures.

1 16. A flat panel display, comprising:

2 a first substrate including

3 a plurality of scan lines and a plurality of signal lines

4 intersecting to define a plurality of pixel regions,

5 a plurality of pixel electrodes disposed in the pixel

6 regions,

7 a plurality of stripe-shaped shielding layers disposed

8 between the signal lines and the pixel electrodes and

9 overlapping the pixel electrodes,

10 a plurality of complementary shielding structures;

11 a second substrate including

12 a main shielding structure having a plurality of main

13 spacings substantially corresponding to the pixel

14 regions and a plurality of gaps, wherein each gap

15 substantially corresponds to one of the scan lines

16 or signal lines, each main spacing is connected to

17 at least one of the gaps, and each gap is connected

18 to two adjacent main spacings,

19 a color filter disposed on the main shielding structure;

20 and

21 a liquid crystal sealed between the first and the second

22 substrates,

23 wherein the complementary shielding structures correspond to

24 the gaps.

1 17. A flat panel display, comprising:

2 first and second scan lines parallel to each other in a first

3 direction;

first and second signal lines parallel to each other in a second direction, wherein the first and second scan lines and the first and second signal lines define a pixel region; a main shielding structure having a main spacing substantially corresponding to the pixel region and a gap to be connected to the main spacing and an adjacent main spacing; and a complementary shielding structure disposed under the gap to partially overlap the main shielding structure.

18. The flat panel display of claim 17, wherein the gap is over the first scan line, a first pixel electrode is disposed under the main spacing, a second pixel electrode is disposed under the adjacent main spacing, the first and second pixel electrodes are controlled by the first signal line.

19. The flat panel display of claim 18, wherein a capacitor is adjacent to the first scan line and corresponds to the gap.

20. The flat panel display of claim 18, wherein a complementary shielding structure is adjacent to the first scan line.

21. The flat panel display of claim 17, wherein the gap is over the first signal line, a first pixel electrode is disposed under the main spacing, a second pixel electrode is disposed under the adjacent main spacing, the first and second pixel electrodes are controlled by the first scan line.

22. The flat panel display of claim 21, further comprising first and second stripe-shaped layers at both sides of the first signal line; and first and second complementary shielding layers constituting the complementary shielding structure to partially overlap the first signal line and the main shielding structure and

7 contact the first and second stripe-shaped shielding layer
8 respectively.

1 23. The flat panel display of claim 21, further comprising
2 first and second stripe-shaped layers at both sides of the first
3 signal line; and
4 first and second complementary shielding layers constituting
5 the complementary shielding structure to partially overlap
6 the first and second stripe-shaped layer and the main
7 shielding structure and contact the first signal line.

1 24. The flat panel display of claim 21, further comprising
2 first and second stripe-shaped layers at both sides of the first
3 signal line; and
4 first, second, third and fourth complementary shielding layers
5 constituting the complementary shielding structure,
6 wherein the first and second complementary shielding
7 layers overlap the main shielding structure and contact
8 the first and second stripe-shaped shielding layer
9 respectively, the third and fourth complementary shielding
10 layers overlap the main shielding structure and contact
11 the first signal line, and the first and second
12 complementary shielding layers overlap the third and
13 fourth complementary shielding layers.